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| 09/676,598 | 09/29/2000 | Howard L. Operowsky | [BOC9-2000-0005US1] | 2104 |
| 7590 | 08/26/2004 | | EXAMINER | TWEEL JR, JOHN ALEXANDER |
| Kenneth A. Seaman IBM Corporation 219 Glen Oaks Road Charlotte, NC 28270 | | | ART UNIT | PAPER NUMBER |
| | | | 2636 | H |
| | | | DATE MAILED: 08/26/2004 | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|------------------------------|------------------------|---------------------|
| | 09/676,598 | OPEROWSKY ET AL. |
| Examiner | Art Unit | |
| John A. Tweel, Jr. | 2636 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 07 June 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-36 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

1. This Office action is in response to the remarks filed 6/7/04.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-6, 11-15, 19-26, 29-33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** (supplied with previous action) in view of **Knoll et al** (supplied with previous action).

For claim 1, the apparatus for providing information to the driver of a vehicle taught by **Yokoyama** includes the following claimed subject matter, as noted, 1) the claimed positioning device is met by the current position detector (No. 12) receiving inputs from sensors for GPS, Direction, distance and steering (Nos. 14, 16, 17, 19) which determines the location of a vehicle, 2) the claimed storage device is met by the map information storage (No. 10) including stored information about the location of a desired driver action such as the distance before a turn is to be made, and 3) the claimed comparator is met by the arithmetic control (No. 22) with its built-in route computer (No. 22) which compares the location of the vehicle with the stored information about the location of a turn and which provides an audible signal when the location of the vehicle is in a predetermined relationship to the location of the turn. However, although there is a display unit (No. 28) associated with the system, it is not a display on a windshield.

The en route vehicle guidance system with heads up display taught by **Knoll** includes similar subject matter as the primary invention, most notably a positioning and navigation system with simple route entry methods. As seen in Figures 1-7, simple turning directions are presented to the driver as well as vehicle speed and engine rpm. As stated in the specification (Col. 7, Lns. 26-31), the purpose of the heads up display is to enable the driver to recognize indicators, such as speed and traffic information even if his attention is directed to the traffic situation and without having to remove his eyes from the road. The need for adjustment of the eyes of the driver is eliminated to a large extent.

The reference taught by Yokoyama presents an ideal platform onto which a heads up display may be applied. The information needed to enable a display is already present to drive the display (No. 28) already present. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a heads-up display similar to Knoll into the primary reference for the purpose of enabling the driver to recognize simple driving directions without having to remove his eyes from the road.

For claim 2, the projector of **Knoll** is a heads up display.

For claim 3, both references provide audible indicators of a message in response to the direction signal.

For claim 4, the audible indicator of **Yokoyama** includes a speech synthesis system that provides an audible message.

For claim 5, the speech synthesis system of **Yokoyama** provides an audible message that is based on the upcoming turn required by the driver.

For claim 6, as seen in the description of the **Yokoyama** system in relation to Figure 14, a first indicator is given at a first distance such as 300m from the desired location and a second indicator at a second, shorter distance such as 100m from the desired location is given.

For claim 11, the method of providing driving instructions taught by **Yokoyama** includes the following claimed subject matter, as noted, 1) the claimed sensing the position of the vehicle is achieved using the current position detector (No. 12), 2) the claimed comparing the position of the vehicle with a desired location is achieved using the arithmetic control (No. 20) with route computer (No. 22), 3) the claimed generating a signal is achieved using the display unit (No. 28) and speakers (No. 34) that indicates that a driver should turn if the vehicle is at a predetermined distance with respect to an upcoming turn. However, although there is a display unit (No. 28) associated with the system, it is not a display on a windshield.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above.

For claim 12, the both references provide audible signals indicating the driver should turn at an upcoming location.

For claim 13, the system of **Knoll** presents the information on a windshield.

For claim 14, the system of **Yokoyama** includes several speakers (No. 34) to broadcast message thereon.

For claim 15, Figure 3 of **Yokoyama** displays a distance to the next crossing.

For claim 19, the predetermined relationship of **Yokoyama** is distance to the upcoming turn.

For claim 20, the program stored on a storage medium for generating a displayed message to a driver taught by **Yokoyama** includes the following claimed subject matter, as noted, 1) the claimed program element for determining a message for display is contained within the route guiding unit (No 26) that determines what direction should be given at the next upcoming turn, 2) the claimed program element for determining an appropriate time is contained within the route computer and arithmetic control (No. 20) that determines when the instruction should be given, and 3) the claimed program element coupled to a projector is contained within the hardware of the display unit (No. 28) that displays messages at the appropriate time. However, this message is not displayed on the windshield of the car at the appropriate time.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above.

For claim 21, the system of **Yokoyama** determines the message to display based on the upcoming turn and the direction to take thereby. Also, the system determines based on distance prior to the location of the turn for the driving instruction to be both displayed and announced on the audible system.

For claim 22, one determining system to locate the car in the system of **Yokoyama** is a GPS receiver (No. 14).

For claim 23, the GPS system of **Yokoyama** receives its instructions from a remote source.

For claim 24, the system of **Yokoyama** includes a route-guiding unit (No. 26) located in the arithmetic control (No. 20) that provides the navigation to the system.

For claim 25, the service for providing information to the driver of a vehicle taught by **Yokoyama** includes the following claimed subject matter, as noted, 1) the claimed receiving at least one desired destination is achieved using the map information storage (No. 10) having destinations that are input by the driver to drive to, said information storage also 2) determining a route along with the arithmetic control (No. 20) with route computer (No. 22) to reach the destination including at least one intersection to be traveled, 3) the claimed determining the location of the vehicle is achieved using the current position detector (No. 12) that determines when the vehicle is reaching an upcoming turn and providing a message through the display unit (No. 28) and the speakers (No. 34). However, the message is not displayed on the windshield when the vehicle is approaching the one turn.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above.

For claim 26, the system for displaying information to a driver in a vehicle taught by **Yokoyama** includes the following claimed subject matter, as noted, 1) the claimed location system is met by the GPS receiver (No. 14) and direction sensor (No. 16) which determines the location of the vehicle, 2) the claimed

storage device is met by the map information storage (No. 10) which provides pictures of the roadway near the location of the vehicle in response to the location of the vehicle, and 3) the claimed device which generates a display is met by the display unit (No. 28) which displays the picture of the roadway. However, the picture is not on the windshield of the vehicle allowing the driver to see the display without removing his eyes from the roadway.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above.

For claim 29, the pictures seen in Figures 2 and 3 of **Yokoyama** include driving directions.

For claim 30, the driving instructions in **Yokoyama** are in the form of a turn indicated on the picture of the roadway.

For claim 31, the pictures shown in **Yokoyama** have been taken and stored in memory (No. 10).

For claim 32, the method for displaying information to a vehicle driver taught by **Yokoyama** includes the following claimed steps, as noted, 1) the claimed determining the position of the vehicle is achieved using the GPS receiver (No. 14) and direction sensor (No. 16) which determines the location of the vehicle, 2) the claimed finding a picture of an intersection is achieved using the map information storage (No. 10) which provides pictures of the roadway near the location of the vehicle in response to the location of the vehicle, and 3) the claimed displaying the picture of the intersection is achieved using the display unit (No. 28) which displays the picture of the roadway. However, the picture is

not on the windshield of the vehicle allowing the driver to see the picture while looking out the windshield.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above.

For claim 33, the method taught by **Yokoyama** retrieves stored pictures of the intersections from memory (No. 10).

For claim 36, Figures 2 and 3 of **Yokoyama** add driving instructions to the display.

4. Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** in view of **Knoll et al** as applied to claims 1 and 11 above, and further in view of **Davis et al**.

For claim 7, the combination of references includes the claimed subject matter as discussed in the rejection of claim 1 above. However, neither reference includes an indication that the driver did not make the desired driver action, whereby the driver receives an indication of the missing of the desired driver action after the action was missed.

The automobile navigation system using real time spoken driving instructions taught by **Davis** provides spoken instructions to the driver of an automobile to guide the driver along a route. This invention, called the "Back Seat Driver", contains a map database and route finding algorithm. A position sensor tracks the location of the automobile. Spoken instructions are then given well in advance of an upcoming turn to guide the driver to their destination. An

important aspect of the system is to notify the driver that a mistake has been made (Col. 2, Lns. 50-53) and then finds a new route from the current location. The obvious advantage of this property is to prevent the driver from getting lost in an unfamiliar area.

All three references pertain to similar subject matter; that is, the navigation of vehicles using graphic and speech synthesis. The Yokoyama reference in particular stops its speech production when the driver has deviated from the set course. This system would greatly benefit from the self-correcting system of Davis. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a notification that a turn has been missed in the combination of reference above for the purpose of preventing the driver from getting lost in unfamiliar territory.

For claim 17, the combination of references includes the claimed subject matter as discussed in the rejection of claim 11 above. However, neither reference includes an indication that the driver did not make the desired driver action, whereby the driver receives an indication of the missing of the desired driver action after the action was missed.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 7 above.

5. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** in view of **Knoll et al** as applied to claim 1 above, and further in view of **Ohmura et al**.

For claims 8-10, the combination of references includes the claimed subject matter as disclosed in the rejection of claim 1 above. However, there is no wireless receiver that receives broadcast traffic information, weather information, or advertising information.

To access this information in navigation apparatus is not new in the prior art. The navigation apparatus taught by **Ohmura** provides a driver with necessary information without offering an excessive amount of information. This is achieved by setting priority to different types of information to be received. As seen in Figures 3B and 6 of the invention, a myriad of information types can be accessed by the apparatus. The information handled by this system is provided by Vehicle Information Control System, audio equipment, radio, on-vehicle telephone, tele-text broadcasting and the like. The type of information presented can be urgent information, traffic, weather, sports, news, and music titles.

The Ohmura reference is plain evidence that a myriad of information can and has been received in conjunction with navigation apparatus. The primary references, especially **Yokoyama**, present ideal platforms onto which different receivers may be installed to receive different types of information. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include receivers to access information pertaining to traffic, weather, and advertising in the navigation apparatus for the purpose of presenting pertinent information that may help the driver easier determine the route that should be taken.

6. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** in view of **Knoll et al** as applied to claim 11 above, and further in view of **Trovato et al**.

For claim 16, the method taught by the combination of references above includes the claimed subject matter as discussed in the rejection of claim 11 above. However, the method does not provide an indication of a desired action a predetermined time period in advance of the desired action.

The portable system for providing voice-driving directions taught by **Trovato** determines a range based on both distance and time from the current position to a position at which the instructions should be spoken. The time period accounts for the amount of time required speaking the instructions, for the reaction time of the driver at the speed that the system is moving in the vehicle and for an error in position associated with GPS systems. The obvious advantage of this system is to provide real time instructions that are given to a driver well in advance of the upcoming turn thereby reducing driver error.

All three references pertain to similar subject matter; that is, vehicle navigation systems. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide information of a desired action a predetermined time period in advance of the turn for the purpose of reducing driver error.

For claim 18, the predetermined relationship of **Trovato** is estimated time to a desired location.

7. Claims 27, 28, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** in view of **Knoll et al** as applied to claims 26 and 32 above, and further in view of **Ong** (supplied with previous action).

For claim 27, the combination of references above includes the claimed subject matter as discussed in the rejection of claim 26 above. However, the pictures generated from both references are not live pictures.

The navigation system with three-dimensional display taught by **Ong** includes similar subject matter as the two primary references; that is, a vehicle position data generator generates signals indicating the location of the vehicle as well as pictures to be displayed to the operator of the vehicle with driving directions superimposed thereon. As seen in Figures 4 and 8, one of the systems used to provide a picture to the operator in addition to 3D graphic renderers is a video camera (No. 38) mounted to the vehicle itself. The picture is received by an image capture device (No. 44) onto which a driving direction is added. Heretofore, navigation systems have used local storage devices such as CD-ROM and up-to-the-minute information has not been readily available. The obvious advantage of this system is a realistic view of the territory ahead and the direction being clearly shown on said view.

The primary references, particularly **Yokoyama**, present an ideal platform onto which a camera such as **Ong**'s may be applied. The map information storage may not have the latest information and changes over time may certainly occur with construction or changes in traffic flow. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a

camera such as that of Ong into the combination above to provide realistic, current information to the driver that can be easily understood and read.

For claim 28, the live picture of Ong is from a camera mounted over the roadway.

For claim 34, the method taught by the combination of references above includes the claimed subject matter as discussed in the rejection of claim 32 above. However, the step of finding a picture is not receiving a live picture of the intersection.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 27 above.

For claim 35, the live picture of Ong is from a camera mounted above the intersection.

Response to Arguments

Argument 1:

"The Knoll patent specifically teaches that the information on a heads up display be provided from routes on maps...and does not teach or suggest that the information being displayed be from live or stored pictures. Further, the Knoll patent uses route information which has been entered onto the map and does not indicate driving directions based on the position of the vehicle..[sic]"

Argument 2:

"Since the Yokoyama patent specifically teaches that the display of driving instructions is away from the driver's vision and the present invention intends to place driving directions within the driver's vision, they are fundamentally different."

Argument 3:

"Further, the combination of the teachings is improper when the one reference specifically teaches to avoid the features of the present invention, namely displaying information like driving directions in view of the driver as the driver is looking out the windshield. Further, neither of the two references teaches a reason to combine the teachings of the other, and the office action merely suggests that 'the reference taught by the Yokoyama reference presents an ideal platform onto which a head up display may be applied' and 'The information needed to enable a display is already present to drive the display already present.'"

Argument 4:

"Such use of the applicants' own teachings to find the elements in the prior art and then to assemble them into a rejection is an example of hindsight reconstruction of the invention and is impermissible."

8. Applicant's arguments filed 6/7/04 have been fully considered but they are not persuasive.

Response to Arguments 1 and 2:

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Response to Argument 3:

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Examiner simply refuses to believe that there is one and only one method to display driving directions such as those found in **Yokoyama et al** to a driver. The Examiner's suspicions were proved true when the **Knoll** reference was found that taught just such a display apparatus. Unfortunately for the Applicant, this is exactly the claimed invention. The rejection above is considered correct and proper at least for this reason.

Response to Argument 4:

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Tweel, Jr. whose telephone number is 703 308 7826. The examiner can normally be reached on M-F 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass can be reached on 703 305 4717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAT
8/20/04



JOHN TWEEL
PRIMARY EXAMINER